Evaluation of serum levels of sirtuin-1 in lung cancer

Abstract

Background: Sirtuin-1 is a protein from the family of sirtuins that has been implicated in inflammaging and oxidative stress in cancer patients.

Aim: The aim of this study was to investigate the serum level of Sirtuin-1 and its relation with quality of life in lung cancer.

Methods & material: Sirtuin-1 levels were measured in 30 male with lung cancer and 50 healthy men. The two groups were matched for age. The difference between the serum levels of Sirtuin-1 between the two groups and its relationship with other clinical parameters were evaluated. Data were analyzed by independent T-test and Spearman correlation and $P < 0.05$ was considered as significant.

Results: Sirtuin-1 levels were significantly lower in the patient group in comparison with healthy group ($P < 0.001$). There was also a significant relationship between serum level of Sirtuin-1 and quality of life according to Karnofsky scale ($P = 0.001$ $r = 0.558$), arterial oxygen saturation ($P = 0.009$ $r = 0.470$) and smoking history ($P=0.003$ $r = -0.330$). Also, the serum levels of Sirtuin-1 were significantly lower in adenocarcinoma than that in squamous cell carcinoma or small cell lung cancer ($p = 0.001$).

Conclusion: In this study, serum levels of sirtuin-1 were lower in patients with lung cancer. In addition, there was a correlation between serum levels of sirtuin-1 and patients' quality of life (according to Karnofsky scale), hypoxia and smoking history. Therefore, decreased serum sirtuin-1 levels in lung cancer reflect the cell aging process and correlate with poor quality of life.

Keywords: Lung cancer, Sirtuin-1, Quality of life, Karnofsky scale.